



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



The border-radius property applies rounded corners to borders.



The base .box element we'll be working with:

```
.box {
  background: grey;
  height: 50px;
  width: 200px;
}
```



The base .box element we'll be working with:

```
.box {
  background: grey;
  height: 50px;
  width: 200px;
}
```



```
.box {
  border-top-left-radius: 15px;
  border-top-right-radius: 15px;
  border-bottom-right-radius: 15px;
  border-bottom-left-radius: 15px;
}
```



```
.box {
  border-top-left-radius: 15px;
  border-top-right-radius: 15px;
  border-bottom-right-radius: 15px;
  border-bottom-left-radius: 15px;
}
```



Example usage of the border-radius property:

```
.box {
  border-top-left-radius: 15px;
  border-top-right-radius: 15px;
  border-bottom-right-radius: 15px;
  border-bottom-left-radius: 15px;
}
```

Applies a 15px rounded corner to our .box.



```
.box {
  border-radius: 15px;
}
```



Example usage of the border-radius property:

```
.box {
  border-radius: 15px;
}
```

we can use the shorthand property to specify all sides at once.



```
.box {
  border-radius: 4px 15px 12px 10px;
}
```



Example usage of the border-radius property:

```
.box {
  border-radius: 4px 15px 12px 10px;
}
```

we can specify each border-radius value individually, as well.



```
.box {
  border-radius: 4px 15px 12px 10px;
}
```



```
border-radius: <top left> <top right> <bottom right> <bottom left>
```



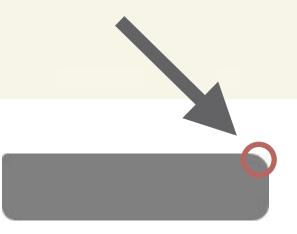
Example usage of the border-radius property:

border-radius: <top left> <top right> <bottom right> <bottom left>



Example usage of the border-radius property:

border-radius: <top left> <top right> <bottom right> <bottom left>

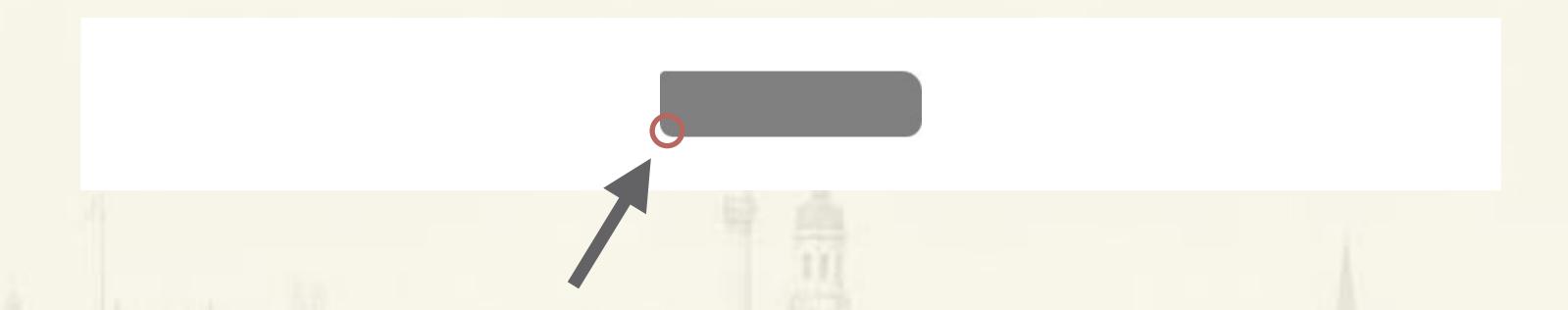




```
border-radius: <top left> <top right> <bottom right> <bottom left>
```



```
border-radius: <top left> <top right> <bottom right> <bottom left>
```





You can also specify the border-radius value in percentages.



```
.box {
  border-radius: 50%;
}
```



```
.box {
  border-radius: 50%;
}
```



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



The box-shadow property specifies a shadow on an element.



```
.box {
  box-shadow: 1px 2px 2px #000;
}
```



```
.box {
  box-shadow: 1px 2px 2px #000;
}
```



```
box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>
```



Example usage of the box-shadow property:

```
box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>
```

If it is not specified (which is the default), a drop shadow is created, rather than an inset shadow.



Example usage of the box-shadow property:

If it is not specified (which is the default), a drop shadow is created,

This icon denotes that the highlighted argument is optional.

Example usage of the box-shadow property:

box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>

The shadow offset x value.



```
box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>

The shadow offset y value.
```



Example usage of the box-shadow property:

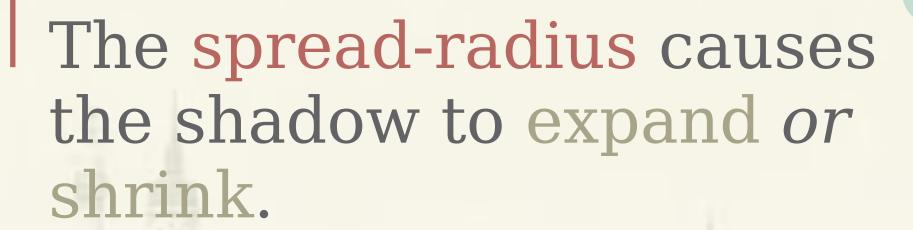
box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>

The blur-radius alters the blur amount of the shadow, causing it

to become bigger and lighter (with a larger value).



```
box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>
```





Example usage of the box-shadow property:

box-shadow: <inset> <offset-x> <offset-y> <blur-radius> <spread-radius> <color>

The color of the shadow.



```
.box {
  box-shadow: 1px 2px 2px #000;
}
```



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

No inset value is specified, so this is a drop shadow.



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

A 1px offset-x value.



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

A 2px offset-y value.



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

A 2px blur-radius.



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

No spread-radius value is specified, so the drop shadow is the same size as the element.



Example usage of the box-shadow property:

```
.box {
  box-shadow: 1px 2px 2px #000;
}
```

The drop shadow color is black.



```
.box {
  box-shadow: 1px 2px 2px #000;
}
```



What if we wanted the blur-radius value to instead be the spread-radius?



Example usage of the box-shadow property:

box-shadow: 1px 2px 2px #000;

If we wanted this 2px to be the spread-radius instead, we'd need to specify 0 as the blur-radius first.



```
box-shadow: 1px 2px 0 2px #000;
```



```
box-shadow: 1px 2px 0 2px #000;

2px is now the spread-radius.
```



Example of the blur-radius and spread-radius properties:





You can specify multiple box-shadows via a comma-separated list:

```
.box {
  box-shadow:
    1px 1px 2px #000,
}
```



You can specify multiple box-shadows via a comma-separated list:

```
.box {
  box-shadow:
    1px 1px 2px #000,
}
```

our first box-shadow.



You can specify multiple box-shadows via a comma-separated list:

```
.box {
  box-shadow:
    1px 1px 2px #000,
    inset 1px 1px 2px blue;
}
```



You can specify multiple box-shadows via a comma-separated list:

```
.box {
  box-shadow:
    1px 1px 2px #000,
    inset 1px 1px 2px blue;
}
```

our second box-shadow.



You can specify multiple box-shadows via a comma-separated list:

```
.box {
  box-shadow:
   1px 1px 2px #000,
   inset 1px 1px 2px blue;
}
```



You can also specify negative values:

```
.box {
  box-shadow: -1px -2px 2px #000;
}
```



You can also specify negative values:

```
.box {
   box-shadow: -1px -2px 2px #000;
}
```



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



The text-shadow property is very similar to box-shadow, but it applies the shadow to text, as the name implies.



Example usage of the text-shadow property:

<h1>I have a shadow!</h1>



```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```



```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```



```
text-shadow: <offset-x> <offset-y> <blur-radius> <color>
```



Example usage of the text-shadow property:

text-shadow: <offset-x> <offset-y> <blur-radius> <color>

The shadow offset x value.



Example usage of the text-shadow property:

text-shadow: <offset-x> <offset-y> <blur-radius> <color>

The shadow offset y value.



Example usage of the text-shadow property:

The blur-radius alters the blur amount of the shadow, causing it to become bigger and lighter (with a larger value).



```
text-shadow: <offset-x> <offset-y> <blur-radius> <color>

The color of I the shadow.
```



```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```



Example usage of the text-shadow property:

```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```

A 1px offset-x value.



Example usage of the text-shadow property:

```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```

A 2px offset-y value.



Example usage of the text-shadow property:

```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```

A 2px blur-radius.



Example usage of the text-shadow property:

```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```

The drop shadow color is black.



```
h1 {
  text-shadow: 1px 2px 2px #000;
}
```



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



BOX SIZING

The box-sizing property is used to change the default CSS box model, which is used to calculate widths and heights of given elements.



- The CSS box model references the design and layout of given HTML elements
- Each HTML element is a "box," which consists of margins, borders, padding, and the content of the element
- The "box model" refers to how those properties are calculated in conjunction with one another in order to set the element's dimensions



The content of the box is where the actual content, the text and images, is located:

CONTENT



The padding clears the area around the content:





The border goes around the padding and content:





The margin clears the area around the border:





```
.box {
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
```



Calculating the width of the .box:

```
.box { width: 300px; }
```

300px



```
.box { padding: 10px; }
```





```
.box { padding: 10px; }
```

```
20px
300px
```



```
.box { border: 2px solid black; }
```

```
2px
20px
300px
2px
```



```
.box { border: 2px solid black; }
```

```
20px
300px
```



```
.box { margin: 20px; }
```



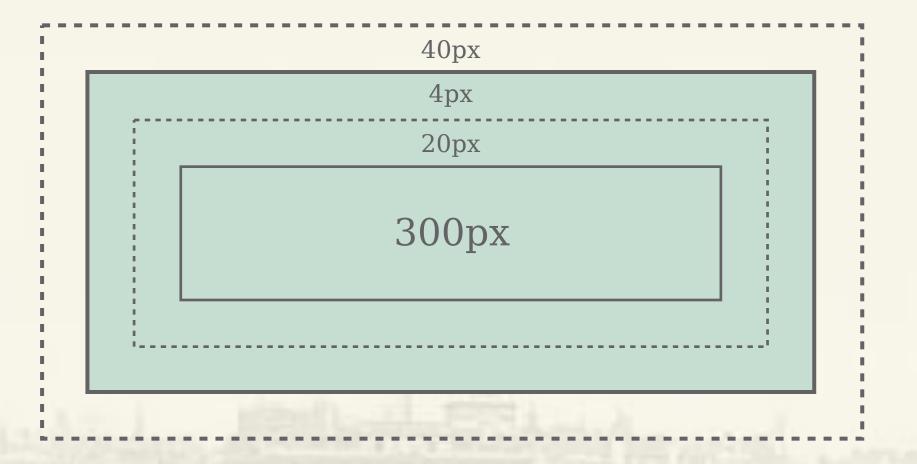


```
.box { margin: 20px; }
```





```
.box { margin: 20px; }
```

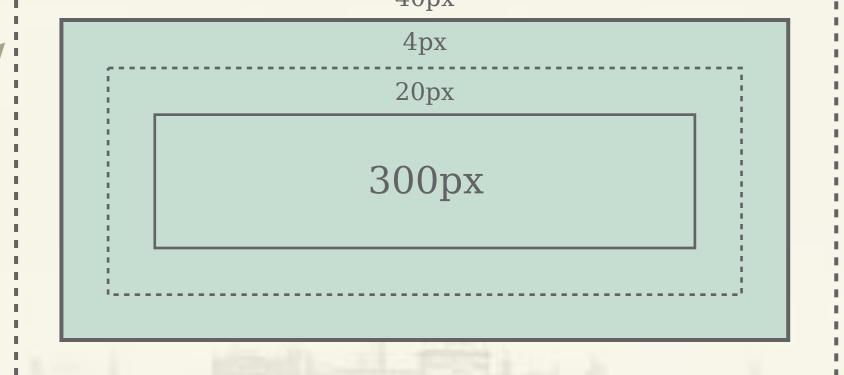




Calculating the width of the .box:

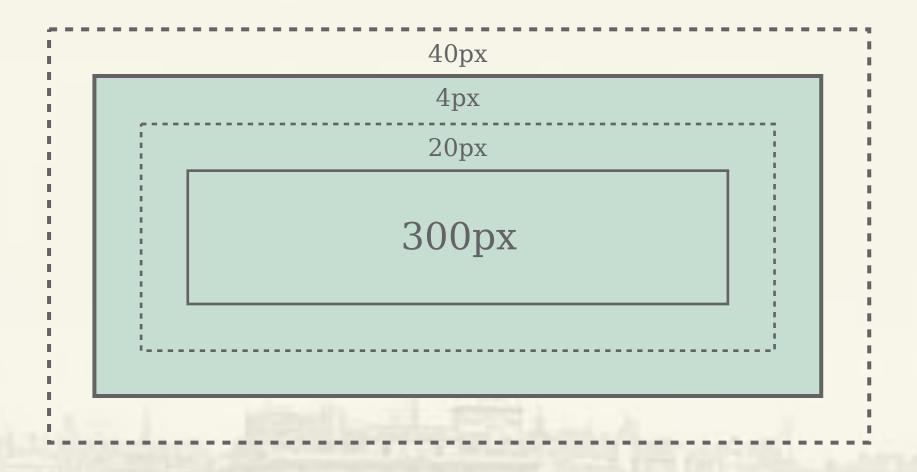
```
.box { margin: 20px; }
```

The margin isn't part of the width.





$$300 + 20 + 4 = 324$$
px





BOX SIZING

The box-sizing property is used to change the default CSS box model, which is used to calculate widths and heights of given elements.



BOX SIZING

There are three different values for box-sizing:

- content-box
- padding-box
- border-box



CONTENT-BOX

This is the default value. The width and height are measured by including *only* the content, but *not* the border, margin, or padding.



The width and height include the padding, but do not include the border or margin.

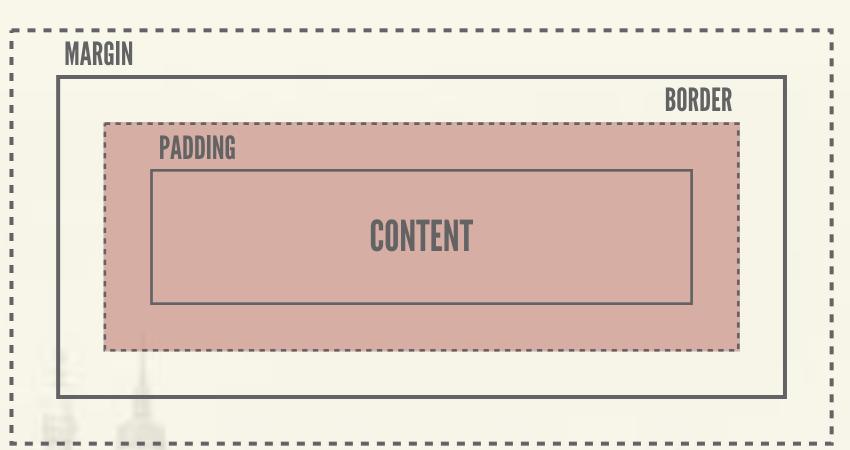


```
.box {
  box-sizing: padding-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
```



Calculating the width of the .box:

```
.box {
  box-sizing: padding-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
```



The padding has been included in the width (content) area, so they are treated as one region.



```
.box {
  box-sizing: padding-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
304px
```



The width and height include the padding and border, but *not* the margin.



```
.box {
  box-sizing: border-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
```



Calculating the width of the .box:

```
.box {
  box-sizing: border-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
```



The padding and border has been included in the width (content) area, so they are treated as one region.



```
.box {
  box-sizing: border-box;
  border: 2px solid black;
  margin: 20px;
  padding: 10px;
  width: 300px;
}
300px
```





TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



MULTIPLE BACKGROUNDS

CSS3 allows you to apply multiple backgrounds to an element. They are stacked in the order in which you specify them.



MULTIPLE BACKGROUNDS

First, specify your background-images in a comma-delimited list:

```
.element {
  background-image: url(bg1.png), url(bg2.png);
}
```



MULTIPLE BACKGROUNDS

Then specify the background-position for each, in order:

```
.element {
  background-image: url(bg1.png), url(bg2.png);
  background-position: top left, center right;
}
```



Finally, specify the background-repeat for each:

```
.element {
  background-image: url(bg1.png), url(bg2.png);
  background-position: top left, center right;
  background-repeat: no-repeat, no-repeat;
}
```





The first backgroundimage we specified.



The second backgroundimage we specified.

You can also use the shorthand background:

```
.element {
  background:
    url(bg1.png) top left no-repeat,
}
```



You can also use the shorthand background:

```
.element {
  background:
    url(bg1.png) top left no-repeat,
    url(bg2.png) center right no-repeat;
}
```



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



COLOR

CSS3 provides multiple ways to work with color:

- RGBa
- HSLa



RGB represents the three additive primary colors, red, green, and blue. In CSS3, we can also pass the alpha value (the "a" in RGBa), which represents the opacity of a color.



Example usage of rgba:

```
.element {
   color: rgba(0, 0, 0.75);
}
```



Example usage of rgba:

```
.element {
   color: rgba(0, 0, 0.75);
}
```

Here we're specifying a 75% opaque black color value.



Example usage of rgba:

```
.element {
  color: rgba(0, 0, 0, 0.75);
}

Here we're specifying "o o o" as
  the RGB value, which is black.
```



Example usage of rgba:

```
.element {
  color: rgba(0, 0, 0, 0.75);
}

Here we're specifying a "0.75"

alpha value, which is 75% opaque.
```



CSS3 also adds HSLa (Hue, Saturation, Lightness). In addition to providing the hue, saturation, and lightness values, you can specify the alpha value for the opacity of the color.



Example usage of hsla:

```
.element {
  color: hsla(240, 100%, 50%, 0.75);
}
```



Example usage of hsla:

```
.element {
  color: hsla(240, 100%, 50%, 0.75);
}
```

The hue value.



Example usage of hsla:

```
.element {
  color: hsla(240, 100%, 50%, 0.75);
}
```

The saturation value.



Example usage of hsla:

```
.element {
  color: hsla(240, 100%, 50%, 0.75);
}
```

The lightness value.



Example usage of hsla:

```
.element {
  color: hsla(240, 100%, 50%, 0.75);
}
```

The alpha value.



HSLa + RGBa

HSLa is more intuitive than RGBa, and it's much easier to make color adjustments on the fly.



HSLa + RGBa

HSLa is more intuitive than RGBa, and it's much easier to make color adjustments on the fly.

However, use whichever color utility you prefer.



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



CSS3 allows you to specify the opacity of an element using the opacity property.



Example usage of the opacity property:

```
.element {
  opacity: 0.45;
}
```



Example usage of the opacity property:

```
.element {
  opacity: 0.45;
}

Here we're specifying a "0.45"
  opacity value, which is 45% opaque.
```



Example output of the opacity property:





Example output of the opacity property:





Opacity on an element affects all elements that are nested inside.



Example of the opacity property with nested elements:

```
<div class="element">
  <h2>Hello.</h2>
</div>
```

```
.element {
  background: url(bg.jpg) center no-repeat;
  opacity: 0.45;
}
```



Example output of the opacity property with nested elements:





Example output of the opacity property with nested elements:





Example output of the opacity property with nested elements:



The 0.45 opacity on the element affects the text as well as the image.





TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



TABLE OF CONTENTS

- Border Radius
- Box Shadow
- Text Shadow
- Box Sizing
- Multiple Backgrounds
- Color
- Opacity
- Gradients



GRADIENTS

CSS3 provides the ability to create gradients, smooth transitions between two or more colors.



GRADIENTS

There are two types of gradients that browsers support:

- Linear gradients
- Radial gradients



To create a linear gradient, we need to specify the starting point, the ending point, and optional stop-color points.



```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```



```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```



```
linear-gradient(<angle> to <side-or-corner>, <color-stop>s)
```



Example usage of a linear-gradient:

linear-gradient(<angle> to <side-or-corner>, <color-stop>s)

We can specify the direction through an angle or a keyword.



Example usage of a linear-gradient:

linear-gradient(<angle> to <side-or-corner>, <color-stop>s)

The angle is generally a degree (e.g. 45deg).



Example usage of a linear-gradient:

linear-gradient(<angle> to <side-or-corner>, <color-stop>s)

The side-or-corner consists of two keywords:

Horizontal: left or right

Vertical: top or bottom



Example usage of a linear-gradient:

```
linear-gradient(<angle> to <side-or-corner>, <color-stop>s)
```

The color-stops consists of a color and an optional stop position, which can be either a percentage or length.



```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```



Example usage of a linear-gradient:

```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```

No angle is specified.



Example usage of a linear-gradient:

```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```

The side-or-corner is bottom, which makes the gradient go from the top to the bottom.



KEYWORDS

to top Odeg to bottom -180deg to right 270deg to left 90deg

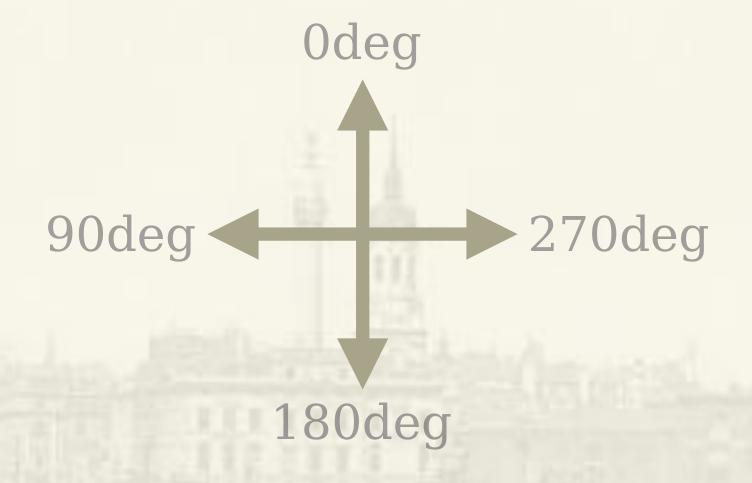
Example usage of a linear-gradient:

```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```

This is translated into 180deg.



```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```







Example usage of a linear-gradient:

```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```

The top of the gradient starts at red.



Example usage of a linear-gradient:

```
.element {
  background: linear-gradient(to bottom, red, yellow);
}
```

The gradient ends at yellow at the bottom.



A radial gradient, unlike a linear gradient, creates a gradient that extends from an origin, the center of the element, extending outward in a circular or elliptical shape.



A radial-gradient consists of:

- The center
- The ending shape contour and position
- Color stops



Example usage of a radial-gradient in its simplest form:

```
.element {
  background:
    radial-gradient(aqua, blue);
}
```



Example usage of a radial-gradient in its simplest form:

```
.element {
  background:
    radial-gradient(aqua, blue);
}
```



Example usage of a radial-gradient in its simplest form:

```
.element {
  background:
    radial-gradient(aqua, blue);
}
```

This creates a two-color elliptical gradient that radiates from the center by default.



```
radial-gradient(<shape> <size> at <position>, <color-stop>s)
```



```
radial-gradient(<shape> <size> at <position>, <color-stop>s)

Specify the shape or size of the gradient.
?
```



Example usage of a radial-gradient:

radial-gradient(<shape> <size> at <position>, <color-stop>s) The shape of the gradient; circle or ellipse. The default is ellipse.

Example usage of a radial-gradient:

radial-gradient(<shape> <size> at <position>, <color-stop>s)

The size of the gradient, which consist of keywords.



KEYWORDS

closest-side closest-corner closest-corner farthest-side farthest-corner

KEYWORDS

closest-side closest-corner farthest-side farthest-corner



The default value.

```
radial-gradient(<shape> <size> at <position>, <color-stop>s)

The size can also be a length or percentage.
```



Example usage of a radial-gradient:

radial-gradient(<shape> <size> at <position>, <color-stop>s)

Same as backgroundposition. Default is center.



Example usage of a radial-gradient:

```
radial-gradient(<shape> <size> at <position>, <color-stop>s)
```

The color-stops consists of a color and an optional stop position, which can be either a percentage or length.



```
.element {
  background: radial-gradient(circle at top left, aqua, blue);
}
```



Example usage of a radial-gradient:

```
.element {
  background: radial-gradient(circle at top left, aqua, blue);
}
```

The shape of the gradient is circle, rather than ellipse.



```
.element {
  background: radial-gradient(circle at top left, aqua, blue);
}

The position of the gradient is top left.
```



```
.element {
  background: radial-gradient(circle at top left, aqua, blue);
}

The first color-stop
  is aqua.
```



```
.element {
  background: radial-gradient(circle at top left, aqua, blue);
}
The last color-stop
is blue.
```



Example output of the radial-gradient:

